

Automated Fuel Station

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Abstract: Recently fuel stations are controlled manually. These fuel stations consume more time and it also requires manpower to operate. Day by day there is rapid growth in the number of vehicles and machines in today's advanced and automated world. Requirement of fuel is also increasing day by day because of vehicles and machines totally depend on fuel. Consumer needs to wait in queue as there is rush at the fuel station especially at the gas pumps it is very common. The fuel station in our countries is more time consuming which causes waste of time. In this paper, we developed an automated fuel station management system which can overcome the disadvantages of present system. The result of this methodology places cashless transactions and authenticated system It will adversely affect the financial status of our country. It will also help to improve corruption at fuel stations and can help fuel stations to become faster and less time consuming.

Keywords: Finger Print Scanner, Fuel Station

I. Introduction

In recent days the distribution of fuel at the fuel stations were controlled by manpower to the respective customer vehicles. This distribution was totally dependent on mans loyalty who is responsible to do this job. Nowadays, there is rapid growth in advancement of industries and they are thinking more towards consumer's satisfaction. For the secure distribution of products, these industries are trying to develop a new advance security system to achieve their goals efficiently. However in today's petrol distribution system there are some disadvantages related with stealing of petrol, unauthorized petrol selling and wastage of manpower etc. The 21st century is known as the internet age as there is increase in use of internet in our day to day activities. Examples of these applications include online banking and brokerage, cash management, tax filling, computerized petrol pump, medical field. But, computerized petrol pump is concerned, many modifications has been already done .All the related data of consumers are efficiently inserted with the help of computers. But, as far as safety is concerned, we are still behind. The main objective of this system is to provide authentication to consumer and control the opening or closing of the tank valve according to amount mentioned by the consumer. We will use GSM technology for this purpose.

II. System Implementation

Present system

Though today's fuel stations are automated yet there is a need to implement a fully automated system to provide cashless and authenticated transactions. There is no any fake currency detector machine at fuel stations. As large amount of cash is available at counter there are chances of robbery. Malpractices are done while distributing the fuel. We can pay by using credit card or debit card but sometimes we forgot to carry it with us. To avoid these uncertainties and keep the record of each and every transaction there is a need to modify the present system.

System implemented

Two units will be placed at petrol station which will take care of customers needs & also it will continuously monitor the fuel level, temperature of fuel & any accidental situation that may happen at the petrol station. The third is the data base regarding customer's ids, passwords & will also take care of the account balance. The GSM module will act as a link between customer & petroleum industry. The software part of this project will help to keep record of all the things in short we are providing total security while distributing the fuel. Finger print scanner will scan the finger impression which will be in digital code; output of finger print module is connected to computer. The scanned thumb impression is compared with the data base stored in PC. If Thumb impression is matched with the data base stored in PC then user's authentication process is completed. If user thumb impression is not verified then system will ask user to repeat the authentication process is again. The login phase will be completed once by the main controller. User has to enter the amount as per requirement

of fuel to be injected in vehicle. Afterwards the fuel injection process gets started and motor gets turn ON. While fuel injection is in process RED LED is continuously on after fuel injection is done green LED is turns ON. Meanwhile automatic cash deduction will be done and user will get details on his/her registered mobile number. This system will lead to a totally automated fuel distribution system.

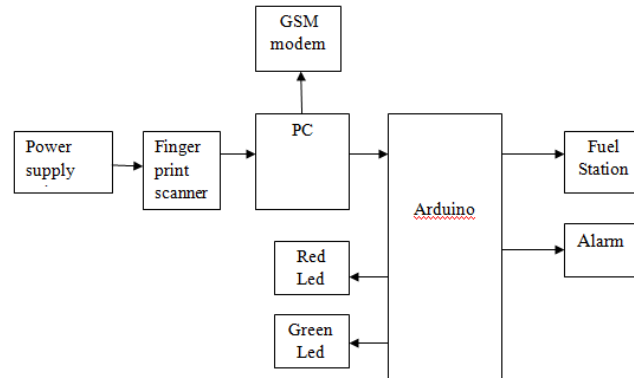


Fig No 1: Block Diagram of Automated Fuel Station

III. Figures And Tables

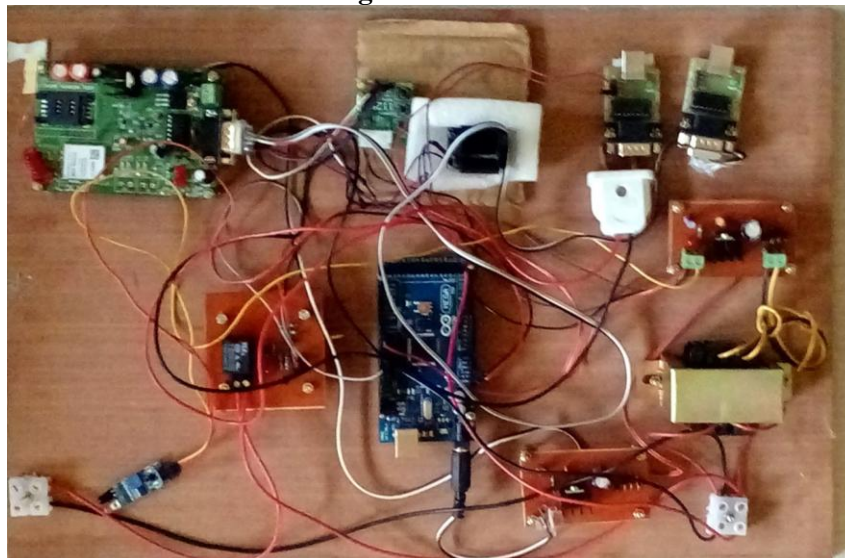


Fig No:1 Hardware Setup

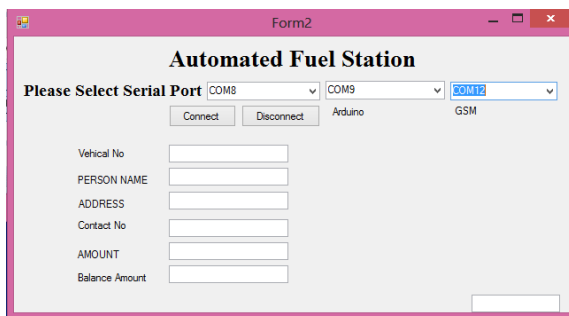


Fig no2: User Login

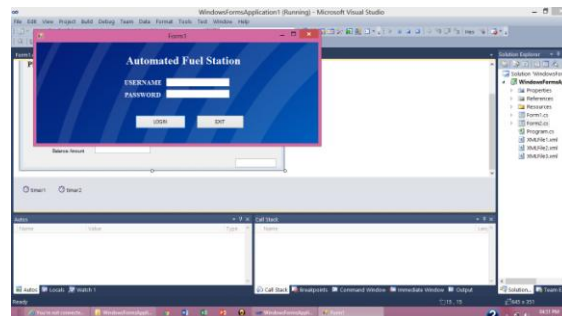




Fig No 3: Process Completion

Table 4.1: User Detail and Thumb Impression

Biometric thumb impression	User details
	Kori Preeti Omprakash Bank Name: Bank of India AccNo:XXXXXXXXXXXXX Acc Type: Saving Branch Name :Panchavati IFSC:SBIN0006333
	Kedare Monika Gautam Bank Name: Punjab National Bank AccNo:XXXXXXXXXXXXX Acc Type: Saving Branch Name: Sharanpur Road IFSC: PUNB03762000

IV. Conclusion

During implementation of our project we studied various biometric system and selected finger print module. We implemented the user authentication and verification process successfully, using same module. After completion of this customer will get notification on users registered contact detailed. All present Fuel stations are manual. This project will introduce secure and cashless system which will avoid fuel theft.

References

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